

# MM1Z Series

SOD-123

SOD-123 Plastic-Encapsulate Zener Diode



## 特征 Features

- 齐纳击穿阻抗低; Low Zener Impedance
- 最大功率耗散 500mW; Power Dissipation of 500mW
- 高稳定性和可靠性。High Stability and High Reliability

## 机械数据 Mechanical Data

- 封装: SOD-123 封装 SOD-123 Small Outline Plastic Package
- 极性: 色环端为负极 Polarity: Color band denotes cathode end
- 环氧树脂 UL 易燃等级 Epoxy UL: 94V-0
- 安装位置: 任意 Mounting Position: Any

极限值和温度特性(TA = 25°C 除非另有规定)

**Maximum Ratings & Thermal Characteristics** (Ratings at 25°C ambient temperature unless otherwise specified.)

参数 Parameters	符号 Symbol	数值 Value	单位 Unit
功率消耗 Power Dissipation	Pd	500 <sup>1)</sup>	mW
正向压降 Forward Voltage @IF=10mA	Vf	0.9 <sup>2)</sup>	V
存储温度 Storage temperature range	Ts	-65-+150	°C
Thermal resistance junction to ambient air Warmewiderstand Sperrschicht -umgebende Luft	RthA	400	K/W <sup>1)</sup>

1) Device mounted on ceramic PCB: 7.6mm x 9.4mm x 0.87mm with pad areas 25mm<sup>2</sup>

2) Short duration test pulse used to minimize self-heating effect

3) f=1KHz

电特性 (TA = 25°C 除非另有规定)

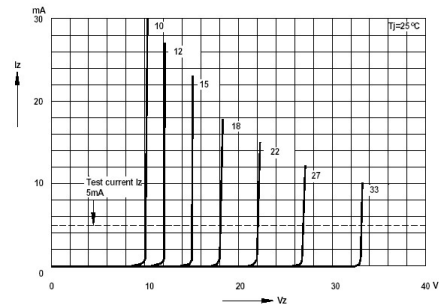
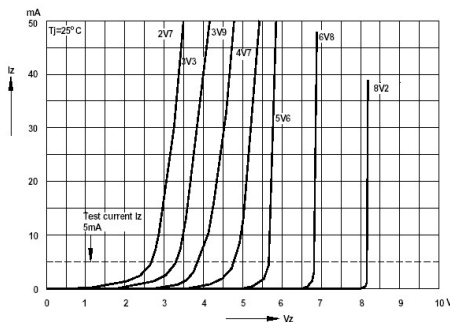
**Electrical Characteristics** (Ratings at 25°C ambient temperature unless otherwise specified.)

Device	Marking	Zener Voltage Range				Maximum Zener Impedance <sup>3)</sup>			Maximum Reverse Current		Typical Temperature coefficient @ IZTC=mV/°C		Test Current IZTC
		Vz@Izt			Izt	Zzt @Izt	Zzk @Izk	Izk	IR	VR	Min	Max	
		Nom(V)	Min(V)	Max(V)									
MM1Z2V0	WY	2.0	1.80	2.15	5	150	600	1.0	100	1.0	-3.5	0	5
MM1Z2V4	WX	2.4	2.2	2.6	5	100	600	1.0	50	1.0	-3.5	0	5
MM1Z2V7	W1	2.7	2.5	2.9	5	100	600	1.0	20	1.0	-3.5	0	5
MM1Z3V0	W2	3.0	2.8	3.2	5	95	600	1.0	10	1.0	-3.5	0	5
MM1Z3V3	W3	3.3	3.1	3.5	5	95	600	1.0	5	1.0	-3.5	0	5
MM1Z3V6	W4	3.6	3.4	3.8	5	90	600	1.0	5	1.0	-3.5	0	5
MM1Z3V9	W5	3.9	3.7	4.1	5	90	600	1.0	3	1.0	-3.5	0	5
MM1Z4V3	W6	4.3	4.0	4.6	5	90	600	1.0	3	1.0	-3.5	0	5
MM1Z4V7	W7	4.7	4.4	5.0	5	80	500	1.0	3	2.0	-3.5	0.2	5
MM1Z5V1	W8	5.1	4.8	5.4	5	60	480	1.0	2	2.0	-2.7	1.2	5
MM1Z5V6	W9	5.6	5.2	6.0	5	40	400	1.0	1	2.0	-2.0	2.5	5
MM1Z6V2	WA	6.2	5.8	6.6	5	10	150	1.0	3	4.0	0.4	3.7	5
MM1Z6V8	WB	6.8	6.4	7.2	5	15	80	1.0	2	4.0	1.2	4.5	5
MM1Z7V5	WC	7.5	7.0	7.9	5	15	80	1.0	1	5.0	2.5	5.3	5
MM1Z8V2	WD	8.2	7.7	8.7	5	15	80	1.0	0.7	5.0	3.2	6.2	5
MM1Z9V1	WE	9.1	8.5	9.6	5	15	100	1.0	0.5	6.0	3.8	7.0	5
MM1Z10	WF	10	9.4	10.6	5	20	150	1.0	0.2	7.0	4.5	8.0	5

# MM1Z Series

Device	Marking	Zener Voltage Range				Maximum Zener Impedance			Maximum Reverse Current		Typical Temperature coefficient @ IZTC=mV/°C		Test Current IZTC
		Vz@Izt			Izt	Zzt @Izt	Zzk @Izk	Izk	IR	VR	Min	Max	
		Nom(V)	Min(V)	Max(V)									
MM1Z11	WG	11	10.4	11.6	5	20	150	1.0	0.1	8.0	5.4	9.0	5
MM1Z12	WH	12	11.4	12.7	5	25	150	1.0	0.1	8.0	6.0	10.0	5
MM1Z13	WI	13	12.4	14.1	5	30	170	1.0	0.1	8.0	7.0	11.0	5
MM1Z15	WJ	15	13.8	15.6	5	30	200	1.0	0.1	10.5	9.2	13.0	5
MM1Z16	WK	16	15.3	17.1	5	40	200	1.0	0.1	11.2	10.4	14.0	5
MM1Z18	WL	18	16.8	19.1	5	45	225	1.0	0.1	12.6	12.4	16.0	5
MM1Z20	WM	20	18.8	21.2	5	55	225	1.0	0.1	14.0	14.4	18.0	5
MM1Z22	WN	22	20.8	23.3	5	55	250	1.0	0.1	15.4	16.4	20.0	5
MM1Z24	WO	24	22.8	25.6	5	70	250	1.0	0.1	16.8	18.4	22.0	5
MM1Z27	WP	27	25.1	28.9	2	80	300	0.5	0.1	18.9	21.4	25.3	2
MM1Z30	WQ	30	28.0	32.0	2	80	300	0.5	0.1	21.0	24.4	29.4	2
MM1Z33	WR	33	31.0	35.0	2	80	325	0.5	0.1	23.1	27.4	33.4	2
MM1Z36	WS	36	34.0	38.0	2	90	350	0.5	0.1	25.2	30.4	37.4	2
MM1Z39	WT	39	37.0	41.0	2	130	350	0.5	0.1	27.3	33.4	41.2	2
MM1Z43	WU	43	40.0	46.0	2	100	700	1.0	0.1	32.0	10.0	12.0	5
MM1Z47	WV	47	44.0	50.0	2	100	750	1.0	0.1	35.0	10.0	12.0	5
MM1Z51	WW	51	48.0	54.0	2	125	750	1.0	0.1	38.0	10.0	12.0	5
MM1Z56	XW	56	52.0	60.0	2	135	700	1.0	0.1	39.0	10.0	12.0	5
MM1Z62	6E	62	58.0	66.0	2	200	1000	1.0	0.2	47.0	10.0	12.0	5
MM1Z68	6F	68	64.0	72.0	2	250	1000	1.0	0.2	52.0	10.0	12.0	5
MM1Z75	6H	75	70.0	79.0	2	300	1000	1.0	0.2	57	10.0	12.0	5

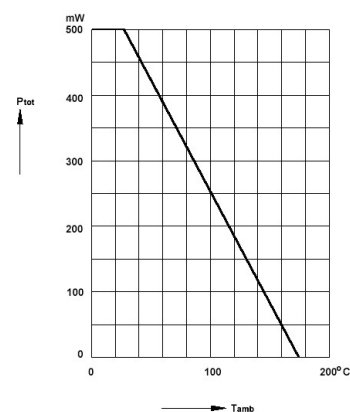
### Breakdown characteristics at Tj=constant (pulsed)



### Forward characteristics



### Admissible power dissipation versus ambient temperature



# MM1Z Series

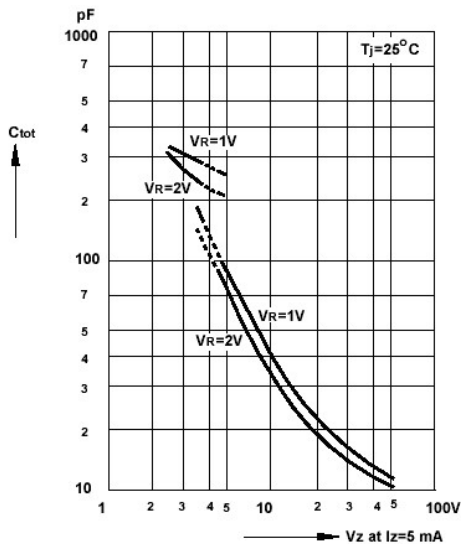
Pulse thermal resistance versus pulse duration



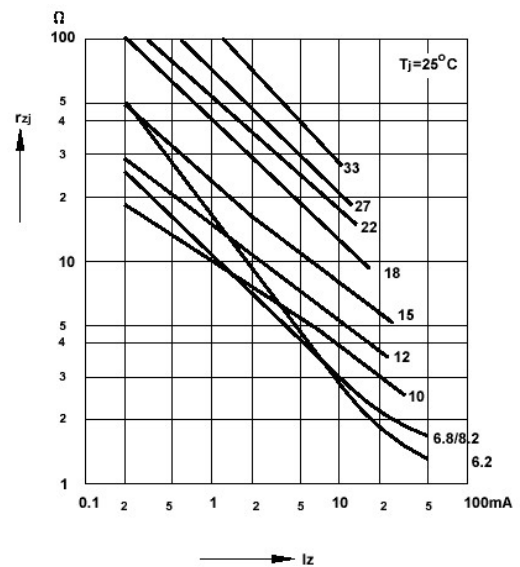
Dynamic resistance versus Zener current



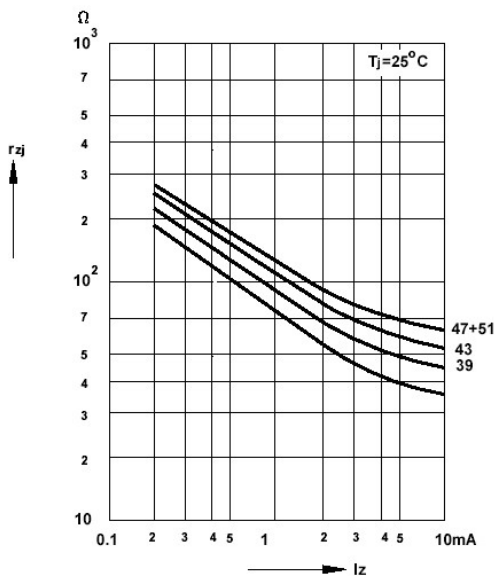
Capacitance versus Zener voltage



Dynamic resistance versus Zener current



Dynamic resistance versus Zener current



Thermal differential resistance versus Zener voltage

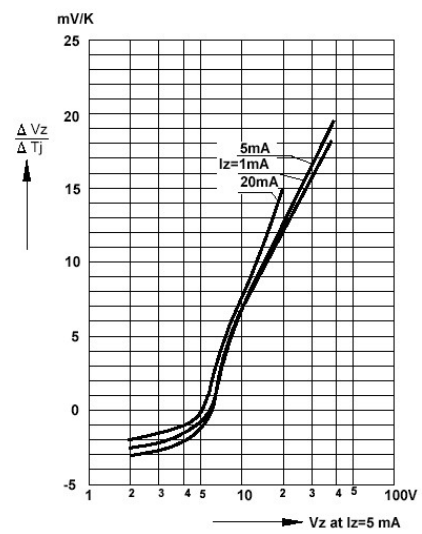


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Dynamic resistance versus Zener voltage



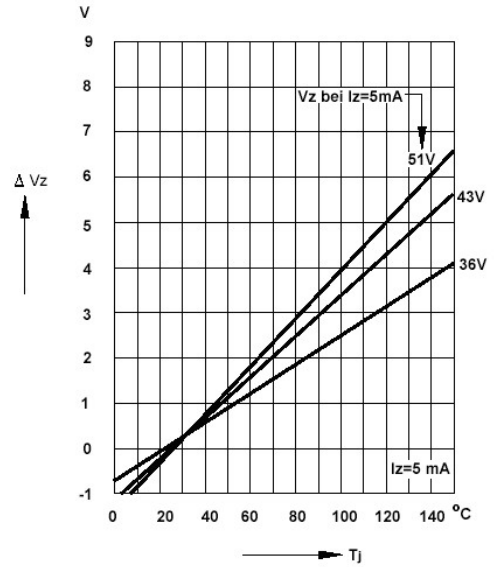
Temperature dependence of Zener voltage versus Zener voltage



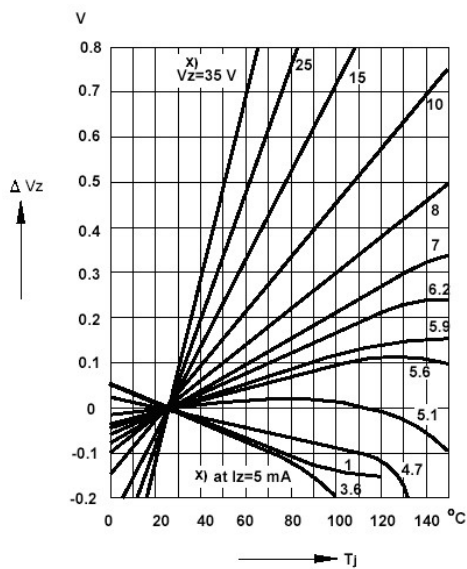
Temperature dependence of Zener voltage versus Zener voltage



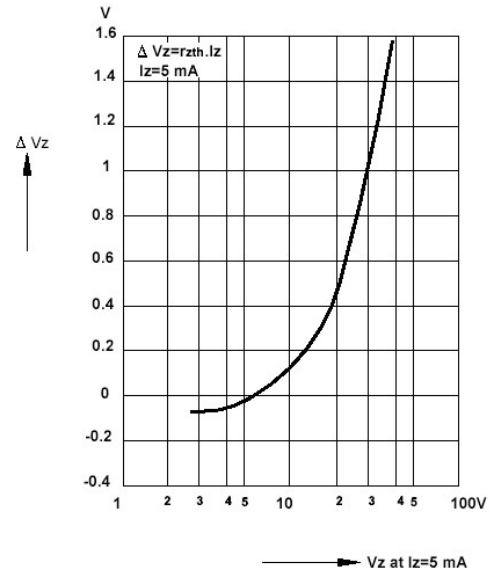
Change of Zener voltage versus junction temperature



Change of Zener voltage versus junction temperature



Change of Zener voltage from turn-on up to the point of thermal equilibrium versus Zener voltage



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## SOD-123 PACKAGE OUTLINE Plastic surface mounted package

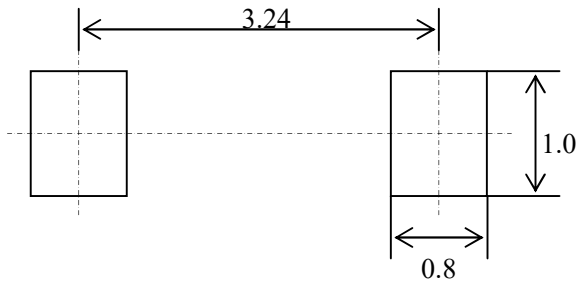


SYMBOL	DIMENSIONS	
	MIN.	MAX.
A	1.050	1.250
A1	0.000	0.100
A2	1.050	1.150
b	0.450	0.650
c	0.080	0.150
D	1.500	1.700
E	2.600	2.800
E1	3.550	3.850
L	0.500REF	
L1	0.250	0.450
$\theta$	0°	8°

### 焊盘设计参考

Precautions: PCB Design

Recommended land dimensions for SOD-123 diode. Electrode patterns for PCBs



中心距: 3.24  
 脚宽: 0.55  
 焊盘宽: 1.00  
 脚长: 0.50  
 焊盘长: 0.80

技术要求:

- 1, 塑封体尺寸: 2.70 X 1.60
- 2, 未注公差为:  $\pm 0.05$
- 3, 所有单位: mm

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